In the Claims:

Please cancel claim 22 without prejudice, waiver, or disclaimer. Please substitute the following clean copy text for the pending claims of the same number.

1. A method for forming an ohmic contact on a semiconductor layer comprising:

(a) depositing a reactive layer comprising at least one electrically conductive material on at least a portion of a compound semiconductor layer, wherein the at least one electrically conductive material is chosen from nickel, ruthenium, vanadium, gold, and cobalt; and

(b) depositing a refractory layer comprising electrically conductive material on the reactive layer, wherein said refractory layer is substantially free of gold.

7. The method according to claim 1 wherein said step of depositing a reactive layer comprising at least one electrically conductive material comprises depositing a thin reactive layer of at least one electrically conductive material chosen from nickel, ruthenium, vanadium, gold, and cobalt.

21. An ohmic contact to a compound semiconductor layer comprising:

(a) a reactive layer comprising at least one electrically conductive material, wherein the at least one electrically conductive material is chose from nickel, ruthenium, vanadium, gold, and cobalt, and

(b) a refractory layer, wherein said refractory layer is substantially free of gold.

Sub C3 C4

34. An ohmic contact to a compound semiconductor layer comprising:

(a) a reactive layer, said reactive layer is nickel; and

(b) a refractory layer, said refractory layer is titanium,

wherein said refractory layer is substantially free of gold.

Sub C4 C5

36. A method for forming an ohmic contact on a compound semiconductor layer of a semiconductor device comprising:

(a) depositing a reactive layer on at least a portion of a compound semiconductor layer of a semiconductor device, wherein the reactive layer is nickel;

(b) depositing a refractory layer on said reactive layer, said refractory layer is titanium,

wherein said refractory layer is substantially free of gold.

Please add the following new claims:

45. (Newly Added) The ohmic contact of claim 21, wherein the ohmic contact can be used in a laser diode, a light emitting diode, a Schottky diode, a field effect transistor, a metal-semiconductor field effect transistor, a metal-oxide-semiconductor field effect transistor, and a high electron mobility transistor.

46. (Newly Added) The ohmic contact of claim 34, wherein the ohmic contact can be used in a laser diode, a light emitting diode, a Schottky diode, a field effect transistor, a metal-semiconductor field effect transistor, a metal-oxide-semiconductor field effect transistor, and a high electron mobility transistor.

47. (Newly Added) The ohmic contact of claim 43, wherein the semiconductor device comprises a laser diode, a light emitting diode, a Schottky diode, a field effect transistor, a metal-semiconductor field effect transistor, a metal-oxide-semiconductor field effect transistor, and a high electron mobility transistor.

48. (Newly Added) The ohmic contact of claim 44, wherein the semiconductor device comprises a laser diode, a light emitting diode, a Schottky diode, a field effect transistor, a metal-semiconductor field effect transistor, a metal-oxide-semiconductor field effect transistor, and a high electron mobility transistor.

49. (Newly Added) The method of claim 1, further comprising:

depositing a dielectric layer onto the refractory layer.

50. (Newly Added) The method of claim 49, further comprising:

depositing a nitride liner onto a portion of the dielectric layer.

51. (Newly Added) The method of claim 50, further comprising:

depositing a spacer onto a portion of the nitride liner.

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52. (Newly Added) The method of claim 36, further comprising:

depositing a dielectric layer onto the refractory layer.

53. (Newly Added) The method of claim 52, further comprising:

depositing a nitride liner onto a portion of the dielectric layer.

54. (Newly Added) The method of claim 53, further comprising:

depositing a spacer onto a portion of the nitride liner.

55. (Newly Added) The ohmic contact of claim 21, further comprising:

a dielectric layer disposed upon the refractory layer.

56. (Newly Added) The ohmic contact of claim 55, further comprising:

a nitride liner disposed onto a portion of the dielectric layer.

57. (Newly Added) The ohmic contact of claim 36, further comprising:

a spacer disposed onto a portion of the nitride liner.

58. (Newly Added) The ohmic contact of claim 57, further comprising:

a dielectric layer disposed upon the refractory layer.

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59. (Newly Added) The ohmic contact of claim 58, further comprising:

a nitride liner disposed onto a portion of the dielectric layer.

60. (Newly Added) The ohmic contact of claim 56, further comprising:

a spacer disposed onto a portion of the nitride liner.

61. (Newly Added) The method of claim 1, further comprising:

depositing a low sheet resistance layer onto the refractory layer.

62. (Newly Added) The method of claim 36, further comprising:

depositing a low sheet resistance layer onto the refractory layer.

63. (Newly Added) The ohmic contact of claim 21, further comprising:

a low sheet resistance layer disposed upon the refractory layer.

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64. (Newly Added) The ohmic contact of claim 36, further comprising:

a low sheet resistance layer disposed upon the refractory layer.